preparation, and said increase after said addition of said test means that said test agent reversed the tryptophan gene mutation of said cell.

Claim 7 (withdrawn): The assay as defined in claim 4 wherein cell is *Salmonella typhimurium* TA2220*lux* (comprising pBRTN*lux*AM1) (UC25450) or *Salmonella typhimurium* TA2211*lux* (comprising pBRTN*lux*AMmuc631) (UC25451), said medium comprises ampicillin, said exogenous metabolic activation system is an S-9 preparation, and said increase after said addition of said test agent means that said test agent reversed the β-lactamase gene mutation of said cell.

Claims 8-12 (canceled).

Claim ~~13~~ 1 (currently amended): A genetically modified cell ~~as defined in claim 8~~ comprising an expressible heterologous *lux(CDABE)* gene complex under the control of a constitutive promoter, and, a reversible point mutation of a gene, ~~or a progeny cell thereof,~~ wherein said gene is a β-lactamase gene.

Claim ~~14~~ 2 (original): A cell as defined in claim ~~13~~ 1 wherein said point mutation in said β-lactamase is in the active site serine codon.

Claim 15 (original): A cell as defined in claim 14 selected from *Salmonella typhimurium TA2220lux* (UC25450) and *Salmonella typhimurium TA2211lux* (UC25451).

Claim 16 (withdrawn): A bioluminescent reverse mutagenicity assay, which comprises: bioluminescent reverse mutagenicity assays, which comprise: contacting a bacterial cell with a test agent and an exogenous metabolic activation system, where said cell comprises an expressible heterologous *lux(CDABE)* gene complex (or operon) and a reversible point mutation in a gene which in a non-mutated form encodes a polypeptide whose functioning is critical for the cell to be metabolically active in a selective medium; measuring an amount of light emitted from said cell; and comparing said amount of said light emitted by said cell exposed to said test agent and said exogenous metabolic activation system with substantially the same cell contacted with an exogenous metabolic activation system in the absence of said test agent; where an amount of emitted light is detected in said cell contacted with said test agent and said exogenous metabolic activation system, and substantially no amount of emitted light is detected in said cell exposed to said exogenous metabolic activation system in the absence of said test agent, means that said test agent is a mutagen;